

MPM 1D
Math Opener

The value of a new Porsche Cayenne is modelled by the equation

$$y = -10\,000x + 175\,000$$

Identify the meaning of the key values in this equation.

$y = -10\,000x + 175\,000$

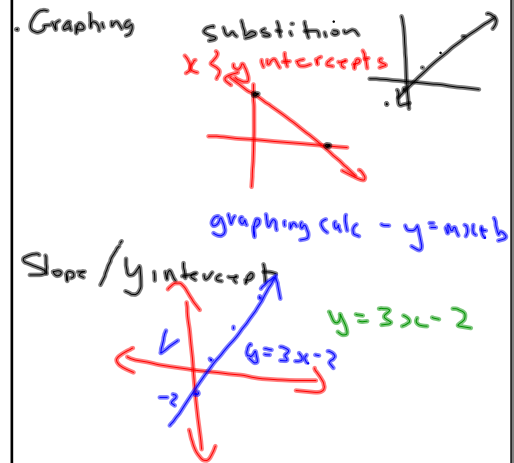
Value of a Sports car

$m =$ depreciation after x years
each year the car goes down in value \$10,000

$x = 0$ Brand New $\rightarrow 175\,000$

Mar 22-1:11 PM

Skill Review



Mar 22-12:55 PM

Finding the Equation of a Line

$$y = mx + b$$

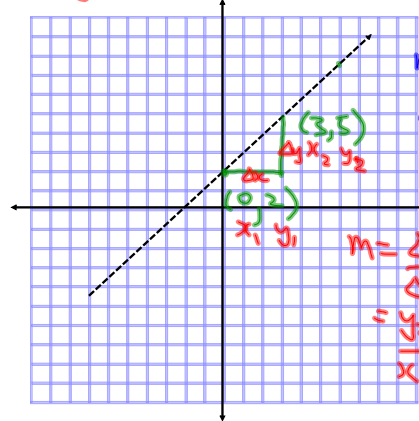
$m =$ slope
 $b =$ y int

Slope Formula

$$m = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{(y_2 - y_1)}{(x_2 - x_1)}$$

$(3, 6)$
 $(4, -10)$
 x_1, y_1
 x_2, y_2

$$y = mx + b$$



$m =$ slope
 $b =$ y int
 $(+2)$

$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

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$$y = mx + b$$

$m = ?$
 $b = +2$

$\therefore y = mx + 2$

$(0, 2)$ $(3, 5)$
 x_1, y_1 x_2, y_2

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{5 - 2}{3 - 0}$$

$$= \frac{3}{3}$$

$$= 1$$

$\therefore y = +1x + 2$

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Find the Eqn

$A(5, 6)$ $B(6, 9)$ Label Pts
 x_1, y_1 x_2, y_2

Sub = Slope Formula

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{9 - 6}{6 - 5}$$

$$m = \frac{3}{1}$$

State the Eqn

$$y = 3x + b$$

Solve for b

Sub a pt $(6, 9)$
 x, y

$$9 = 3(6) + b$$

$$9 = 18 + b$$

$$9 - 18 = b$$

$$-9 = b$$

$y = 3x - 9$ State the Eqn

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Find the slope of a line that passes through $A(2,3)$ and $B(5,9)$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$$= \frac{9-3}{5-2}$$

$$= \frac{6}{3}$$

$$= 2$$

$m = 2$ slope of +2

ii) Find the Eqn

$$y = 2x + b$$

$A(2,3)$

$$3 = 2(2) + b$$

$$3 = 4 + b$$

$$3 - 4 = b$$

$$-1 = b$$

$$y = 2x - 1$$

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Find the Eqn

$S(6,3)$ $T(4,6)$

$x_1 y_1$ $x_2 y_2$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{6-3}{4-6}$$

$$= \frac{3}{-2}$$

$$= -\frac{3}{2}$$

$$y = -\frac{3}{2}x + b$$

$(4,6)$

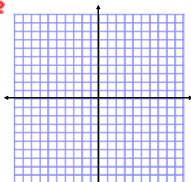
$$6 = -\frac{3}{2}(4) + b$$

$$6 = -\frac{12}{2} + b$$

$$6 = -6 + b$$

$$6 + 6 = b$$

$$12 = b$$

$$y = -\frac{3}{2}x + 12$$


Mar 22-1:43 PM

$$y = -\frac{3}{2}x + b$$

$(6,3)$

$x y$

$$3 = -\frac{3}{2}(6) + b$$

$$3 = -\frac{18}{2} + b$$

$$3 = -9 + b$$

$$3 + 9 = b$$

$$12 = b$$

$$y = -\frac{3}{2}x + 12$$

Feb 27-1:37 PM

Text

p133-135

24-7

9,10,12,16

Mar 25-11:30 AM

mk Help

4a) $(1,3)$

$x y$

$$y = 2x + b$$

$$3 = 2(1) + b$$

$$3 = 2 + b$$

$$3 - 2 = b$$

$$1 = b$$

$$y = 2x + 1$$

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4 b) $y = 2x + b$

$(2,-3)$

$x y$

$$-3 = 2(2) + b$$

$$-3 = 4 + b$$

$$-3 - 4 = b$$

$$-7 = b$$

$$y = 2x - 7$$

Feb 27-1:48 PM